CLAIMS

1. (Currently amended) A process for removing a source-derived contaminant from a hydrocarbon-containing material, comprising

contacting the hydrocarbon-containing material with a clay in a filter apparatus at a temperature in the range from about 50°C to about 180°C, at least part of the source-derived contaminant being sorbed by the clay; ~~and~~

removing hydrocarbon-containing material from the filter apparatus, wherein the removed hydrocarbon-containing material comprises a reduced amount of the source-derived contaminant and the process does not include additional or separate steps to remove any contaminant after the contacting step; and

heating the clay and the clay-contaminant adduct to regenerate the clay material, and providing the regenerated clay material from (d) to (b), wherein the clay is capable of sorbing the source-derived contaminant through at least 300 cycles of regeneration.

2. (Original) The process of claim 1, wherein the source-derived contaminant is a polymer-derived contaminant.

3. (Original) The process of claim 1, wherein the source-derived contaminant comprises one or more of an organic chlorine compound, a nitrogen compound, sulfur or an organic or inorganic sulfur compound, color, or an offensive or non-hydrocarbon odor.

4. (Previously presented) The process of claim 1, wherein the removed hydrocarbon-containing material is a refinery-grade hydrocarbon.

5. (Previously presented) The process of claim 1, wherein the removed hydrocarbon-containing material is blended with another hydrocarbon to obtain a refinery-grade hydrocarbon.

6. (Original) The process of claim 1, wherein the hydrocarbon-containing material is obtained from thermal decomposition of polymeric or other organic materials.

7. (Original) The process of claim 6, wherein the polymeric material comprises an unsorted mixture of a plurality of thermoplastic polymeric materials.

8. (Original) The process of claim 6, wherein the other organic material comprises one or more of animal offal, manure, crop residuals and plant residuals.

9. (Original) The process of claim 1, wherein the clay comprises Fuller's earth.

10. (Currently amended) A process for producing hydrocarbons from a polymeric material, comprising:

(a) thermally decomposing polymeric material to obtain a first hydrocarbon-containing material comprising one or more polymer-derived contaminant;

(b) contacting the first hydrocarbon-containing material with a clay material at a temperature in the range from about 50°C to about 180°C to form a clay-hydrocarbon-containing material mixture, whereby at least a portion of the polymer-derived contaminant is sorbed by the clay material to form a clay-contaminant adduct; ~~and~~

(c) separating a second hydrocarbon-containing material from the mixture, wherein the second hydrocarbon-containing material comprises a reduced amount of the polymer-derived contaminant and the process does not include additional or separate steps to remove any contaminant after the contacting step;

(d) heating the clay and the clay-contaminant adduct to regenerate the clay material; and

(e) providing the regenerated clay material from (d) to (b),

wherein the clay is capable of sorbing the source-derived contaminant through at least 300 cycles of regeneration.

11. (Cancelled)

12. (Currently amended) The process of ~~claim 11~~ claim 10, wherein in (d) the clay material and the clay-contaminant adduct are heated to a temperature in a range from about 400°C to about 815°C.

13. (Cancelled)

14. (Currently amended) The process of ~~claim 13~~ claim 10, further comprising repeating steps (a)-(e).

15. (Original) The process of claim 10, wherein the polymer-derived contaminant comprises one or more of an organic chlorine compound, a nitrogen compound, sulfur or an organic or inorganic sulfur compound, color, or an offensive or non-hydrocarbon odor.

16. (Original) The process of claim 10, wherein in (a) the polymeric material comprises an unsorted mixture of a plurality of thermoplastic polymeric materials.

17. (Original) The process of claim 10, wherein in (a) the polymeric material is thermally decomposed at a temperature from about 300°C to about 500°C.

18. (Original) The process of claim 10, wherein the second hydrocarbon-containing material has one or more characteristic out of specification for a desired use.

19. (Original) The process of claim 18, further comprising (f) blending the second hydrocarbon-containing material with a petroleum-derived or synthetic hydrocarbon material to adjust one or more said characteristic to meet specification for the desired use.

20. (Original) The process of claim 19, wherein the another petroleum-derived or synthetic hydrocarbon material comprises a recycled material.

21. (Original) The process of claim 20, wherein the recycled material comprises one or more of engine lubricating oil, gear oil or fuel oil.

22. (Original) The process of claim 18, wherein the desired use is as one or more of a motor vehicle fuel, a lubricant, a hydraulic fluid, and a solvent.

23. (Original) The process of claim 10, wherein, in addition to the first hydrocarbon material, (a) yields a second combustible material.

24. (Original) The process of claim 23, wherein the second combustible material is combusted as a heat source in the process.

25. (Currently amended) A process for producing a hydrocarbon suitable for use in a motor vehicle from a recycled polymeric or other organic material, comprising:

(a) providing a first hydrocarbon obtained from thermal decomposition of a recycled polymeric or other organic material, wherein the first hydrocarbon comprises one or more source-derived contaminant;

(b) contacting the first hydrocarbon with a clay material at a temperature in the range from about 50°C to about 180°C to form a clay-hydrocarbon mixture, whereby at least a portion of the source-derived contaminant is sorbed by the clay material to form a clay contaminant adduct;

(c) separating a second hydrocarbon from the mixture, wherein the second hydrocarbon comprises a reduced amount of the source-derived contaminant, and wherein the second hydrocarbon has one or more off-specification characteristic relating to use in a motor vehicle;

(d) heating the clay and the clay-contaminant adduct to regenerate the clay material, and providing the regenerated clay material from (d) to (b), wherein the clay is capable of sorbing the source-derived contaminant through at least 300 cycles of regeneration;

(e) providing another hydrocarbon material, wherein the another hydrocarbon material has one or more characteristic for offsetting the one or more off-specification characteristic; and

(f) blending the second hydrocarbon with the another hydrocarbon to obtain a hydrocarbon wherein the one or more characteristic is within specification for use in a motor vehicle.

26. (Currently amended) The process of claim 25, ~~further comprising~~ wherein in (d) ~~heating~~ the clay and the clay-contaminant adduct are heated to a temperature in a range from about 400°C to about 815°C ~~to regenerate the clay material, and providing the regenerated clay material to (b)~~.

27. (Original) The process of claim 25, wherein the process is continuous and further comprises (g) repeating steps (a)-(f).

28. (Original) The process of claim 25, wherein the use in a motor vehicle comprises one or more of use as a fuel, a lubricant and a hydraulic fluid.

29. (Currently amended) A process for producing a hydrocarbon suitable for a desired use from a recycled polymeric or other organic material, comprising:

(a) providing a first hydrocarbon obtained from thermal decomposition of a recycled polymeric or other organic material, the first hydrocarbon comprising one or more source-derived contaminant;

(b) contacting the first hydrocarbon with a clay material at a temperature in the range from about 50°C to about 180°C to form a clay-hydrocarbon mixture, whereby at least a portion of the source-derived contaminant is sorbed by the clay material;

(c) separating a second hydrocarbon from the mixture, wherein the second hydrocarbon comprises a reduced amount of the source-derived contaminant, wherein the second hydrocarbon has one or more characteristic requiring adjustment for a desired use;

(d) heating the clay and the clay-contaminant adduct to regenerate the clay material, and providing the regenerated clay material from (d) to (b), wherein the clay is capable of sorbing the source-derived contaminant through at least 300 cycles of regeneration;

(e) providing another hydrocarbon material, wherein the another hydrocarbon material has one or more characteristic for offsetting the one or more characteristic requiring adjustment; and

(f) blending the second hydrocarbon with the another hydrocarbon to obtain a blended hydrocarbon wherein the one or more characteristic is within specification for the desired use.

30. (Currently amended) The process of claim 29, ~~further comprising~~ wherein in (d) ~~heating~~ the clay and the clay-contaminant adduct are heated to a temperature in a range from about 400°C to about 815°C ~~to regenerate the clay material, and providing the regenerated clay material from (d) to (b)~~.

31. (Original) The process of claim 29, wherein the process is continuous and further comprises (g) repeating steps (a)-(f).

32. (Currently amended) A process for producing a hydrocarbon suitable for a desired use from a recycled polymeric or other organic material, comprising:

(a) providing a first hydrocarbon obtained from thermal decomposition of a recycled polymeric or other organic material, wherein the first hydrocarbon comprises one or more source-derived contaminant and has one or more characteristic requiring adjustment for a desired use;

(e) providing another hydrocarbon material, wherein the another hydrocarbon material has one or more characteristic for offsetting the one or more characteristic requiring adjustment;

(f) blending the first hydrocarbon with the another hydrocarbon to obtain a blended hydrocarbon wherein the one or more characteristic is within specification for the desired use;

(b) contacting the blended hydrocarbon with a clay material at a temperature in the range from about 50°C to about 180°C to form a clay-hydrocarbon mixture, whereby at least a portion of the source-derived contaminant is sorbed by the clay material; ~~and~~

(c) separating a second hydrocarbon from the mixture, wherein the second hydrocarbon comprises a reduced amount of the source-derived contaminant and has the one or more characteristic within specification for the desired use; and

(d) heating the clay and the clay-contaminant adduct to regenerate the clay material, and providing the regenerated clay material from (d) to (b), wherein the clay is capable of sorbing the source-derived contaminant through at least 300 cycles of regeneration.

33. (Currently amended) The process of claim 32, ~~further comprising~~ wherein in (d) ~~heating~~ the clay and the clay-contaminant adduct are heated to a temperature in a range from about 400°C to about 815°C ~~to regenerate the clay material, and providing the regenerated clay material from (d) to (b)~~.

34. (Currently amended) The process of claim 32, wherein the process is continuous and further comprises (g) repeating steps ~~(a)-(c)~~ (a)-(d) in sequence.

35. (Previously presented) The process of claim 1 wherein the removed hydrocarbon material is a refinery-grade material and is not subjected to either cracking or fractionation subsequent to the removing.

36. (Previously presented) The process of claim 10 wherein the second hydrocarbon material is a refinery-grade material and is not subjected to either cracking or fractionation subsequent to the separating.

37. (Previously presented) The process of claim 25 wherein the second hydrocarbon material is a refinery-grade material and is not subjected to either cracking or fractionation subsequent to the separating.

38. (Previously presented) The process of claim 29 wherein the second hydrocarbon material is a refinery-grade material and is not subjected to either cracking or fractionation subsequent to the separating.

39. (Previously presented) The process of claim 32 wherein the second hydrocarbon material is a refinery-grade material and is not subjected to either cracking or fractionation subsequent to the separating.

40. (Previously presented) The process of claim 1 wherein the filter apparatus comprises a column containing the clay and the hydrocarbon-containing material is passed through the column under pressure, such that the steps of contacting and removing are combined in a single operation.

41. (Previously presented) The process of claim 10 wherein the filter apparatus comprises a column containing the clay and the hydrocarbon-containing material is passed through the column under pressure, such that the steps of contacting and separating are combined in a single operation.

42. (Previously presented) The process of claim 25 wherein the filter apparatus comprises a column containing the clay and the hydrocarbon is passed through the column under pressure, such that the steps of contacting and separating are combined in a single operation.

43. (Previously presented) The process of claim 29 wherein the filter apparatus comprises a column containing the clay and the hydrocarbon is passed through the column under pressure, such that the steps of contacting and separating are combined in a single operation.

44. (Previously presented) The process of claim 32 wherein the filter apparatus comprises a column containing the clay and the hydrocarbon is passed through the column under pressure, such that the steps of contacting and separating are combined in a single operation.